

**Non-technical Abstract**

HIV infection cripples a person's immune system, especially his T lymphocytes. This study will see if transferring genetically engineered healthy T lymphocytes that are immunologically matched with the patient will help the immune system of the HIV infected person. Lymphocytes from the blood of an HIV noninfected identical twin will be removed in a manner similar to blood donation and helper T lymphocytes (CD4 cells) isolated. The cells will be grown in a tissue culture laboratory for 1 to 2 weeks. During this time they will be stimulated to grow with OKT3 which is a monoclonal antibody and IL-2 which is a hormone of the immune system. They will also be treated with modified retroviruses that contain genetic sequences that will uniquely identify the cells' DNA and may inhibit the production of the HIV-1 virus. These retroviruses are not like HIV, and they can not spread from cell to cell. They will not produce an infection. If the gene-engineered cells do inhibit the HIV virus in the patients bodies, this may help stabilize the patient's immune system. After the cells are grown and treated they will be infused into the HIV infected twin. Periodically the HIV infected twin will have tests of his immune system to see if the transfused cells are helping. In addition, special tests (called PCR) will be done on the DNA from his blood lymphocytes to see if the genetically engineered cells are still present in the circulation, to learn how long they will circulate, and to see if there is a difference in the survival of the differently engineered lymphocytes.